Sustainable product innovation without scale and experience, but only for KIBS!

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Extended abstract:

Motivation

Sustainability has become the main driver of business innovation in the current period of economic recuperation that follows close to a decade of slowdown. Defined as the creation of new market space, products and services or processes driven by social, environmental or sustainability issues (ADL Group, 2005), most firms have abandoned the long-held belief that sustainable innovations will disadvantage their competitiveness (Nidumolu, Prahalad & Rangaswami, 2009). Sustainability oriented innovation, from either organizational or technological origins, has been found to be increasingly responsible for both bottom and top-line returns. From input efficiency to greater value-added products, sustainable product innovation is allowing many firms to create new and

stronger sources of competitive advantage (Nidumolu, Prahalad and Rangaswami, 2009).

But whereas the traditional product innovation that characterized the greater part of the twentieth century was found to be enthused by firm size and market experience (Schumpeter, 1939), the performance of product innovation in the knowledge-based economy of the last thirty years has largely been associated with the entrepreneurial and learning orientation adopted by the firms that promote these innovations (Cohen & Klepper, 1996; Wiklund & Shephard, 2003). In the case of sustainable product innovation, it is not yet clear how the size of the firm or its market experience, nor how a firm's entrepreneurial or learning orientation may influence the ultimate performance of such innovation. Nor is it clear how firm types that are characteristic of knowledge-based economies, such as knowledge intensive business service firms (KIBS), are influenced by these factors in their quest for sustainable product innovation performance.

Therefore, this study lays the initial path to help answer these questions by helping to identify the ideal trajectory for sustainable product innovation performance. In line with their increased relevance for the development of efficient servitization strategies at business and territorial level (Bustinza, Gomes, Vendrell-Herrero & Baines, 2017; Cusumano, Kahl & Suarez, 2015; Lafuente, Vaillant, & Vendrell-Ferrero, 2016), KIBS are specifically singled out in the study to scrutinize what sustainable product innovation performance trajectory is best for this particular type of knowledge-intensive business that is playing an increasingly important role in the economy. A common challenge faced by manufacturing businesses is the access to both qualified service delivery partners and the resources and skills needed to successfully co-create value (Lenka, Parida & Wincent, 2017), increase product functionality (Lindström, Nilsson, Parida, Sjödin & Ylinenpää, 2015) and market

and deliver product-service offerings (Parida, Sjödin, Wincent & Kohtamäki, 2014). KIBS businesses constitute the ideal partner for manufacturers for implementing servitization strategies, and this study seeks to shed some light in the sustainable product innovation patterns of KIBS firms which is especially relevant for the sustainability-led resilience and servitization of manufacturing firms.

Research design and preliminary results

To reach the objective of this study we perform a fuzzy set analysis (qualitative comparative analysis) on a sample specifically designed for the purpose of this research that includes information for 74 Costa Rican businesses for 2016.

The findings of the research indicate two ideal configurations in order for firms to reach sustainable product innovation performance. These configurations both include the adoption of entrepreneurial and learning orientations but differ as to the importance of firm size and market experience. Whereas one of the configurations to reach maximum sustainable product innovation performance requires the presence of KIBS businesses that have both an entrepreneurial and learning orientation, the second configuration is specific to non-KIBS firms with strong firm size and age along with entrepreneurial and learning orientation. Of the two optimal configurations for sustainable product innovation, the one including KIBS does not depend on firm size, with age only having a very minor (peripheral) influence.

We find very similar results if we remove the sustainability restriction and analyze the configuration that optimizes the performance of all product innovations. But in this case, KIBS are essential in both optimal configurations reached through the fuzzy set analysis. The difference comes from the importance of the KIBS within the configurations. When KIBS are less important, greater

weight must be given to firm size and market experience to compensate if maximum product innovation performance is to be achieved.

Keywords: sustainable product innovation, knowledge-intensive business services (KIBS), fuzzy set analysis

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